Claims

[c1] 1. A method of forming holes in a photoresist layer over a substrate, comprising the steps of:
exposing the photoresist layer to light through a photomask, wherein the photomask has a plurality of repeated rectangular patterns with inwardly reduced corners thereon; and
developing the photoresist layer to form holes.

[c2] 2. The method of claim 1, wherein after the step of developing the photoresist layer, further includes implanting ions into the substrate using the developed photoresist layer as a mask.

[c3] 3. The method of claim 1, wherein after the step of implanting ions into the substrate, further includes removing the photoresist layer.

[c4] 4. The method of claim 1, wherein the rectangular patterns with inwardly reduced corners on the photomask are suitable for exposing a positive photoresist layer.

[c5] 5. The method of claim 1, wherein the rectangular patterns with inwardly reduced corners comprises a cross-shape pattern.

[c6] 6. The method of claim 1, wherein the rectangular patterns with inwardly reduced corners comprises a pattern with cut corners.

[c7] 7. A method of forming holes through a cross-shape image exposure, comprising the steps of:
forming a photoresist layer over a semiconductor substrate;
conducting an exposure using a photomask having a plurality of cross-shape patterns thereon;
developing the exposed photoresist layer to form a plurality of holes and exposing a portion of the dielectric layer; and
implanting ions into the semiconductor substrate using the developed photoresist layer as a mask.

[c8] 8. The method of claim 7, wherein after the step of implanting ions into the

semiconductor substrate, further includes removing the photoresist layer.

[c9] 9. The method of claim 7, wherein the cross-shape patterns on the photomask are suitable for exposing a positive photoresist layer.

[c10] 10. A method of forming contact holes through a cross-shape image exposure, comprising the steps of:
forming a semiconductor device over a semiconductor substrate;
forming a conductive layer over the semiconductor substrate, wherein the conductive layer is electrically connected to the semiconductor device;
forming a dielectric layer over the semiconductor substrate, wherein the dielectric layer covers the semiconductor device and the conductive layer;
forming a photoresist layer over the dielectric layer;
conducting a photo-exposure using a photomask having a plurality of cross-shape patterns thereon;
developing the photoresist layer to form a plurality of holes; and
etching the dielectric layer using the developed photoresist layer as an etching mask to form a plurality of contact holes that exposes the conductive layer.

[c11] 11. The method of claim 10, wherein the cross-shape patterns on the photomask are suitable for exposing a positive photoresist layer.

[c12] 12. The method of claim 10, wherein after the step of etching the dielectric layer, further includes removing the photoresist layer.

[c13] 13. The method of claim 10, wherein after the step of forming a dielectric layer over the semiconductor substrate, further includes planarizing the dielectric layer.